

January 31, 2014

CPG RESPONSES TO EPA COMMENTS
REVISED DRAFT FEASIBILITY STUDY WORK PLAN
REVISED MARCH 2009

<u>No.</u>	<u>General Comments</u>	<u>CPG Response</u>
1	The Feasibility Study (FS) work plan needs to be updated to include information gathered since the signing of the AOC. In particular, Sections 1, 2 and 5 need significant updating. Where appropriate (for example, throughout Section 1), the language should be revised to be consistent with the RARC.	As a general comment, the CPG submitted a revised FS Work Plan to EPA Region 2 in March 2009. In the intervening period, the CPG inquired periodically on the status of the revised work plan including approval and comments. In December 2013, EPA Region 2 provided these comments. It should be clearly understood that many of the comments that state that the revised draft March 2009 FSWP is out of date or incomplete are a result of the extended period between the CPG's submission and receipt of EPA Region 2's comments, and not omissions and errors on the part of CPG and its contractors. Nonetheless, the work plan has been updated and reorganized to reflect current project status, and language from the RARC has been incorporated. Information gathered since the signing of the AOC is summarized in Sections 1 and 2, and in Tables 1-1 (FS data sets) and 2-3 (QAPPs and data reports).
2	Some key elements of the FS are not included in the work plan. These include applicable or relevant and appropriate requirements (ARARs) identification, procedures for the identification of principle threat wastes, and a process for the identification of disposal locations.	These elements have been included in the WP revision: <ul style="list-style-type: none"> • ARARs—Section 3.2.1 • Principal threat waste—Section 5.4 • Identification of disposal locations—Section 4.3.
3	The FS work plan should include more discussion on the development PRGs and the transition from PRGs to remedial action limits (RALs) or cleanup levels. The concept is treated inconsistently throughout the document and is not clear.	A discussion of PRG development is provided in Section 3.2. RALs are defined in Section 1.2.1, and their development is described in Section 5.2.
4	The process of going from general response actions (GRAs) to the development of remedial action alternatives should be described more clearly.	GRAs and the development of alternatives are described in Sections 4 and 5.

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5	Page 1-3, Section 1.2	For the settlement agreement signed on June 23, 2008, Occidental agreed to perform and fund the work, not Tierra. Reference to the RM 10.9 agreement should be added.	Addressed (page 1-2, Section 1.1.1).
6	Page 1-4, Section 1.4	RBTCs should probably not be pulled out as a separate bullet point. On Page 7-2, they are identified as part of the information used to develop PRGs. If the RAL concept is retained, a description of the concept and how they are developed should be included as a separate bullet.	The separate bullet for RBTCs has been deleted (page 1-11, Section 1.2.3). RBTCs are discussed in Section 3.2.2.
7	Pages 2-1 to 2-2, Section 2.1	Reference to the pathogen survey should be moved to FSP3 and reference to the 2000/2001 creel angler survey should be deleted. Let's discuss the status of all tasks, and whether it makes sense to include a list of approved QAPPs.	References to the pathogen survey and the creel angler survey have been deleted. A table of QAPPs and data reports has been added (Table 2-3).
8	Page 2-6, Section 2.2.1	Delete the last 3vsentences of this section and replace with: "Empirical data collected will be used to better characterize potential sources of contaminants to the LPR and to refine predictions of future conditions."	The sentences cited in the comment have been removed. The CSM section (original Section 2.2.1, revised Section 2.3) has been revised and updated to reflect recent work. Sources are discussed in Section 2.3.1.
9	Page 2-6, Section 2.2.2	The description of the RAO development process in this section is inconsistent with the later discussion of RALs and Target Areas.	The RAO development process is described in Section 3.1. A revised discussion of development of RALs and their application to delineate target areas is provided in Sections 5.2 and 5.3.
10	Page 2-7, Section 2.2.3, Third Paragraph	Update this section to reflect current thinking on groundwater flux measurements.	Porewater sampling conducted for the RM10.9 removal action, and a pending regional groundwater study that may be undertaken by EPA and USGS (as discussed with EPA on 12/17/13), are discussed briefly in Section 2.2.3.
11	Page 2.8, Section 2.2.6	Information about the RM 10.9 removal needs to be added.	Added to Section 1.1.1.
12	Page 2-8, Section 2.2.7, First Paragraph	This section presupposes that the LPRSA will be divided into Target Areas. The identification of target areas should be a stepwise process. The first step in this process should be an evaluation of the site data relative to PRGs based on the results of the risk assessment. These areas may be refined based on a consideration of site specific factors such as sediment bed behavior, adjacent land and water use and the physio-chemical properties of the contaminants. This	The approach to identifying active remediation areas based on development of RALs and delineation of target areas has been revised (Section 5.2).

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		information, in addition other considerations such as bench-scale tests and/or pilot studies, should be used in the development, screening and detailed evaluation of remedial action alternatives. The criterion that should not necessarily be defined as those areas having greatest impact in achieving RAOs.	
13	Page 3-1, Section 3.1	1 st Bullet: Impact of CSOs/SWOs is overstated. Based on existing data, EPA has found that the CSOs and SWOs are relatively minor contributors of COPCs and COPECs. 3 rd Bullet: Delete the phrase at the end of the 3 rd bullet, "...that is significant enough to negate the long-term benefit obtained through mass removal via dredging."	These bullets now appear in Section 1.2.4.1. The mention of the potential impact of CSOs/SWOs has been deleted, and their role as sources has been deemphasized in the WP. Phrase has been deleted.
14	Page 3-2, Section 3.1	Point 8 either needs to be better explained or removed.	Point 8 has been revised.
15	Page 3-3, Section 3.2, Number 10	There should be some recognition that there are methods to control short-term releases during dredging (e.g., silt curtains) and that it is not just a tradeoff between short-term impacts and long-term benefits. Short-term risks can be minimized. The costs and effectiveness of controls during remedy implementation must be discussed in the FS.	Noted. Language in Point 10 has been revised. Measures to control short-term releases will be evaluated as part of short-term effectiveness for each alternative and in the comparison of alternatives (see Section 7).
16	Page 4-1 and 4-2, Section 4.1	a. Contaminants of Concern: EPA's 1999 guidance on the preparation of Record of Decisions (RODs) defines contaminants of concern (COCs) as: "A subset of the contaminants of potential concern (COPCs) that are identified in the RI/FS as needing to be addressed by the response action." COCs should be identified in the FS and should be the focus of the remedy. COPECs should also be referred to. b. The last sentence of the definition of Natural Background should be replaced with the last sentence of the definition of Anthropogenic Background. c. Risk Drivers: This statement should be included in this section: EPA risk assessment policy states that one of the key goals of the risk assessment is to identify the chemicals and pathways that pose the majority of the site	Definitions of key terms for the FS now appear in Section 1.2.1. a. Text added to the definition of COCs. b. Definition of background has been revised to be consistent with the RARC. c. Statement has been included in definition of risk drivers.

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		<p>risk.</p> <p>d. RALs: RALs was not defined in the EPA 2000 citation (cost guidance), and it is not clear how this term, as well as Cleanup Level, is being used in the FS, or where it is defined as a regulatory term. Further, it is unclear how different remedial actions can affect the RALs. Please clarify.</p> <p>e. ARARs should be defined/described in this section as well. The identification of preliminary ARARs should be included in the work plan as well.</p>	<p>d. The definition of RALs (Section 1.2.1) and their development and application (Section 5.2) has been clarified.</p> <p>e. A definition for ARARs has been added. Preliminary ARARs will be identified during the development of the FS.</p>
17	Page 4-2, Section 4.3, Second Paragraph, First Sentence	Definition of "Point Concentration" - delete the following text: ", where each value is given equal weight"	Text deleted from the definition of point concentrations (Section 1.2.1).
18	Page 4-3, Section 4.3	Definition of "RBTCs" – it is unclear how the RBTC will be applied in the FS. A cancer risk of 10^{-6} is the point of departure for evaluating risk.	Application of RBTCs is discussed in Section 3.2.2. The reference to cancer risk thresholds in the definition of RBTCs has been deleted.
19	Page 5-1, Section 5.0, Last Sentence	This sentence does not make sense. Section 2.2.2.2 of the CERCLA RI/FS Guidance describes what should be included in the CSM. It is the risk assessment which will determine whether remedial actions are necessary to protect human health and the environment. The potential to achieve protective levels through application of the site remedy will be the focus of the FS.	The sentence cited in the comment has been removed. The CSM section (now Section 2.3) has been revised to reflect current project status and includes a discussion of the role of the CSM and typical elements.
20	Page 5-1, Section 5.1	Delete the first paragraph of this section, as MPI 2007 is no longer the current CSM.	The paragraph cited in the comment has been deleted. The CSM section has been revised to reflect current project status (Section 2.3). CPG understands that EPA has produced a revised CSM to accompany its revised Early Action FFS, which has not been provided to the CPG. The CPG submitted a preliminary CSM for the entire LPRSA in December 2013.
21	Page 5-1, Section 5.1, First Paragraph	Section 5.1 needs to be updated to reflect our current understanding of the system and the ongoing data needs. The degree to which additional data is needed to support the RI/FS and modeling effort should be an ongoing discussion between the CPG and the agencies with an eye towards how such info will be incorporated in the models, the sensitivity of the	The CSM section has been revised to reflect current project status (Section 2.3).

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		model to these parameters, overall project schedule implications, and direct applicability to detailed alternatives scenarios in the FS.	
22	Page 5-2, Section 5.1	In the bullet list, reference and background should be referred to in a manner consistent with the RARC.	The discussion of background has been revised to be consistent with the RARC (Section 2.2.4).
23	Page 5-3, Section 5.2	Again, the significance of CSOs and SWOs is overstated.	The potential impact of CSOs/SWOs has been deemphasized in the work plan.
24	Page 5-3, Table 5-1	Either remove this table or update it.	Table has been removed.
25	Page 6-1, Section 6.1	<ul style="list-style-type: none"> a. The GRAs outlined below seem to be appropriate. b. Third bullet – MNR, second sentence should be reworded to add: MNR also includes regular monitoring such as the periodic collection and analysis of sediment, fish tissue and surface water samples to ensure... c. Fifth bullet – Containment – Please add the following statement to the end of the paragraph “Capping may also require controls to limit resuspension during cap placement. In addition to an isolation layer, caps may also require an armoring layer to prevent erosion, a habitat layer, and potentially other layers.” 	<p>The identification and screening of remedial technologies is now discussed in Section 4 of the work plan.</p> <ul style="list-style-type: none"> a. Noted (Section 4.1). b. Bullet reworded. c. Added.
26	Page 6-2, Section 6.1	In the last paragraph of this section, what does the word “pending” mean in relation to RAOs?	Text has been revised (Section 4.1). The reference to “pending” RAOs has been deleted. The CPG requested during the December 17, 2013, meeting that EPA provide its RAOs for the revised Early Action FFS.
27	Page 6-2, Section 6.2, First Paragraph	The technologies applicable to each GRA should be identified and screened to eliminate those that cannot be technically implemented at the site. The GRAs are then further defined to focus on a specific technology type. These process options are then screened against effectiveness, implementability and cost. For example, if the GRA is containment, and the specific technology is capping, the process options could be the various types of caps (sand cap, armored cap, amended cap). The various process options are then assembled into a range of remedial action alternatives for evaluation in the FS.	Identification and screening approach has been clarified (Section 4).

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28	Page 6-3, Section 6.2	<p>The existing condition listed may apply to all or a portion of the LPRSA, and the list may include other items.</p> <p>The relevant criteria are technical and administrative feasibility of technologies, not commercial availability. Commercial availability can be a bullet under technical considerations.</p> <p>In the last paragraph, please note that on-site work does not require a permit, although there should be coordination for purposes of permit equivalencies. Adverse impacts to commercial and industrial facilities can be mitigated.</p>	This section has been revised to reflect current conditions (Sections 4 and 6).
29	Page 7-1, Section 7.1	The reference to RALs in the paragraph after the bullets should be removed. Risk based PRGs will be developed.	The development of remedial alternatives is now described in Section 5 of the work plan. The relationship between PRGs and RALs, and their application in the development of alternatives, are described in Section 5.2.
30	Page 7-2, Section 7.1, Second Paragraph	<p>a. Remove the text “developed as part of the RAOs and are” from the first sentence.</p> <p>b. The PRG should be protective of all exposure pathways and receptors, as the most conservative value should be used. PRGs should also comply with ARARs for all exposure pathways being addressed as indicated in the first bullet. As such, the PRGs may not specifically require active remediation, but the remedy must comply with chemical-specific ARARs, which is a threshold criterion.</p>	Discussion of RAOs and PRGs has been revised (Section 3).
31	Page 7-2, Section 7.1, Fifth Bullet	SWACs are not used to develop PRGs. However, SWACs may be used to determine whether PRGs are exceeded. SWACs must be estimated over a surface area that is appropriate for the receptor of interest. In some cases, this may be a site-wide SWAC. In other cases, it may be averaged over a much smaller area (e.g., one river mile) consistent with the exposure assumptions in the risk assessment. A SWAC may not be appropriate for small home range receptors (e.g., clams).	Noted. Discussion of SWACs has been revised (Section 5.2).
32	Page 7-2, Section 7.2	In the second sentence of this section “remedial action” should replace “risk management.”	Discussion of identification of target areas has been revised (Section 5.2).

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		Potential for natural recovery should not be a bullet point here. First it needs to be determined whether an area needs to be remediated, and a remedy for that area needs to be selected. The remedy for the area could be MNR.	
33	Page 7-3, Section 7.2.1	As mentioned previously, we are unclear on how you intend to use the RAL concept. Target areas should be defined by PRGs. This entire section will need to be modified, after our upcoming meeting.	A discussion of PRG development is included in Section 3.2 and the development of RALs has been included in Section 5.2.
34	Page 7-4, Section 7.2.2	May need to look at the migration of contamination from deeper sediments to shallow sediment through groundwater transport in addition to physical erosion.	This section (now Section 5.3) has been revised and streamlined. Groundwater flux may be evaluated by USGS, as discussed at the EPA/CPG meeting on December 17, 2013.
35	Page 7-5, Section 7.2.2	In the first sentence of the first full paragraph on this page, RAL should probably be replaced with PRG.	This section (now Section 5.3) has been revised and streamlined. The paragraph containing the reference to RALs cited in this comment has been deleted.
36	Page 7-5, Section 7.2.2, Third Paragraph	It should not be automatically assumed that the deposited material is clean. The recontamination potential evaluation will need to consider the degree to which recontamination occurs as a result of the deposition of contaminated material, and the effect of dilution by cleaner sediment.	The CPG has not assumed that all deposited material is clean. The discussion of recontamination potential in this section (now Section 5.3) has been revised, and reference to deposition of clean sediment has been deleted.
37	Page 7-5, Section 7.3, First Paragraph	Somewhere, perhaps as a new section in Section 7.2, there needs to be a discussion of disposal options. Where will the dredged material go? This section should also discuss ex-situ treatment options and beneficial reuse of sediments.	A discussion of "Identification of Disposal Locations" has been included (Section 4.3). Disposal and <i>ex situ</i> treatment are discussed in Section 4.1. Options will be identified and evaluated in the FS.
38	Page 7-6, Section 7.3	Point 5 should simply state "Management of identified ongoing sources."	Point 5 has been deleted from the revised discussion of the assembly of remedial alternatives (now Section 5.5).
39	Page 7-6, Section 7.3.2, Third Paragraph	Replace the word reduce with manage on the third line so the revised text reads: "to <u>manage</u> the uncertainty of the information used to support critical decisions."	The discussion of adaptive management in this section (now Section 5.5) has been revised. The text cited in this comment has been deleted.
40	Page 8-1, Section 8.0	Under Implementability, replace "in a manner that meets stakeholder expectations with "Coordination with other government entities is also considered."	Addressed (Section 6).
41	Section 9	This whole section needs to be updated based on 10.9 and	Agreed, the CPG will update the section (now Section 4.2) to

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		other work.	reflect work completed since 2009 and current project status. As discussed with EPA at the December 17, 2013, meeting and described in a letter submitted to EPA by the CPG on January 24, 2014, the CPG believes that the substantive requirements of the AOC and SOW to identify and evaluate candidate remediation technologies in a treatability study program (SOW Sections F.5.a and c) have been met for the LPRSA FS. Additional bench-scale testing or pilot studies are not planned as part of the FS.
42	Pages 10-1 to 10-2, Section 10.0	Under threshold criteria, the term "as a whole" does not appear in the NCP. Under short term effectiveness, effectiveness and reliability of protective or mitigative measures should be added. The language describing implementability and state and community acceptance should better track the NCP. In addition, ability to access the site should not be referred to.	The detailed and comparative evaluation of alternatives is now described in Section 7 of the revised work plan. The presentation and discussion of NCP evaluation criteria (Section 7.1) have been revised to address this comment.
43	Page 10-2	There are 6 elements for reduction of toxicity in the NCP, not 4.	The discussion of reduction of toxicity, mobility, and volume through treatment has been revised to address this comment and identify the elements outlined in the NCP.
44	Section 10	We may have additional comments on this section.	Noted.
45	Page 11-1, Section 11.1	a. Preliminary ARARs should be identified in the FS work plan as should preliminary remedial action objectives (RAOs). The RAO technical memorandum should refine the RAOs and ARARs based on the result of the RI and baseline risk assessments. b. The PRG development process in the RAO should be discussed briefly in this section. c. The meaning of the 5 th sentence is unclear, "It is understood that this approval does not preclude...."	FS reporting and schedule are now presented in Section 8 of the revised work plan. a. The identification of preliminary ARARs and development RAOs are described in Section 3 of the revised work plan. Preliminary ARARs will be identified as the FS is developed. Preliminary RAOs are presented in Section 3.1. ARARs and RAOs will be discussed during the monthly EPA/CPG RI/FS status meetings. b. The development of PRGs is discussed in Section 3.2. c. This section has been revised, as discussed at the December 17, 2013, EPA/CPG meeting, to include FS status update meetings in lieu of Technical Memoranda. The sentence cited in this comment has been deleted.